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Biological Evaluation of a Looper on the Uinta National Forest 1969

A looper, Lambdina punctata (Hulst), continued to defoliate Gambel oak along the Wasatch Front on the Uinta National Forest in 1969. With only a few exceptions, defoliation was heavy over the same areas (American Fork to Provo) that were defoliated in 1968. In 1969, the infestation extended its range south to Levan, Utah.

Heavy larval populations and resulting defoliation to Gambel oak was recorded in widely scattered areas from American Fork to Levan, Utah. Specific areas containing heavy damage were in Battle Creek, Pole Canyon, Dry Mountain, and in the Wash Canyon area. In the Dry Mountain area, after the peak of larval development in mid-August, defoliation was estimated to be 85 to 100 percent (Figure 1).

The first infestation was noticed during the summer of 1967 when Forest personnel reported light defoliation in some areas of the Forest. Since almost nothing was known about this particular looper, regional entomologists made several firsthand observations and initiated laboratory studies in 1968 to gain needed information on the biology and habits of this insect. These studies have continued to the present.

From observations made in late fall of 1968 and again in the fall of 1969, it has been determined that this insect overwinters in the egg stage. Individual eggs were found in the duff around the trees, and along the stalks of mullein plants.

Insect activity begins with the onset of warm weather in May and early June when the overwintering eggs hatch. The larvae feed and develop through June, July, and early August. When populations are heavy and the preferred host, Gambel oak, becomes totally defoliated, the larvae resort to feeding on maple and a variety of herbaceous plants. Upon completion of larval development, they fall to the ground and pupate in the duff around the trees. Approximately three weeks are spent in the pupal stage. Moths begin to emerge in early August and egg laying is completed by fall.

Gambel oak is a hardy species and can withstand severe defoliation; therefore, widespread tree mortality should occur only after several years of severe defoliation. Some trees, particularly those around the archery range, which were almost completely defoliated during 1968 had nearly refoliated by fall of the same year. Also, some trees almost completely defoliated in 1968 showed very little defoliation in 1969. Since looper infestations usually last only three to four years, significant tree mortality is not expected to occur. In some areas, branch mortality was observed; however, we cannot be absolutely certain that this damage is a result of this insect.

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Looper eggs were found in several duff samples taken this fall, and although accurate trend predictions cannot be made, we expect some observable feeding will occur in 1970. Looper infestations are usually characterized by rapid and large changes in population numbers. Hence, this insect should not cause permanent damage to the Gambel oak over large areas. On the other hand, there is a problem of increased fire hazard in those areas of heavy defoliation. Leaf residue increases the fuel supply and the sparse canopy would result in higher ground temperatures. In addition, the fire hazard would begin earlier in the summer.

We do not recommend chemical control. We will check the progress following egg hatch this spring and try to give you a better estimate of expected defoliation at that time.

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Figure 1. Typical Gambel oak defoliation in the Dry Mountain area on the Uinta National Forest, 1969.